Book Reviews.

LE CERVELET (The Cerebellum). An anatomical, clinical and physiological study from the laboratory of Dr. Dejerine. By Dr. André Thomas, formerly Interne in the hospitals of Paris. G. Steinheil, Paris, 1897.

The author has made a very careful study of the cerebellum. We may pass over the chapter devoted to a review of the literature on the physiology of this organ, and direct our attention to the portion which represents the writer's original investigations.

From the study of a case of hemisection of the spinal cord, Thomas concludes: (1) that the cerebellar cortex receives the fibres of the direct cerebellar tract, those of Gowers' tract, and some of those of the posterior columns; (2) that these fibres terminate chiefly in the anterior and superior part of the vermis after decussation; (3) that the fibres of the direct cerebellar tract and of the posterior columns terminate in a higher plane than do those of Gowers' tract. From a case of compression of the spinal cord in Pott's disease with ascending degeneration, studied by the method of Marchi, Thomas concludes that the course of the direct cerebellar tract, and that of the fibres of the posterior columns in the oblongata and restiform body, and that of Gowers' tract in the oblongata and pons, are very similar in man and the lower animals.

Only a small part of the restiform body is composed of fibres from the spinal cord; the greater portion consists of fibres which arise in the oblongata. The restiform body degenerates only slightly from cerebellar lesions. The cerebello-olivary tract contains fibres which arise in the lower olive and terminate in the cerebellar cortex, and not in the dentatum. After a lesion of a cerebellar hemisphere, of long standing, the restiform body and the arciform fibres on the side of the lesion, and the lower olive and the arciform nucleus on the opposite side, may be found atrophied. Thomas destroyed half of the cerebellum in a dog, and killed the animal three and a half months after the operation. He found the cells of Clarke's columns, especially those on the same side as the lesion, atrophied, the cells of the lateral group of the anterior horns in the thoracic region were somewhat decreased in number, and the cells of the lower olive and pontine gray matter of the opposite side had partly disappeared. The reticulated substance of the opposite half of the tegmentum was also atrophied. This experiment showed the rapidity with which retrograde cellular atrophy occurs, especially in short neurones, and the desirability of depending upon the method of Marchi in studying the course of fibres.

Thomas believes that the fibres of the middle cerebellar peduncle arise chiefly in the pontine gray matter of the side opposite to the cerebellar hemisphere in which they terminate, although some may arise on the same side. These fibres end in the cerebellar cortex, and not in the dentatum. A cerebellar hemisphere is connected with one-half of the cerebrum by means of the pyramidal tract and middle cerebellar peduncle, though there is also a connection through the superior peduncle. Atrophy of the middle peduncle from a cerebellar lesion is partly due to the destruction of certain fibres which arise in the cerebellar cortex, but chiefly to the fact that this peduncle contains short neurones, which rapidly undergo retrograde degeneration.

Thomas has found degeneration of the descending cerebellar tract in the anterolateral column of the cord after cerebellar lesions. These fibres are most numerous in the cervical region, but may be traced into the lumbar. He observed some degenerated fibres in the anterior column of the opposite side. The fibres of the descending cerebellar tract terminate about the cells of the anterior horn of the cord without decussating. They arise in the dentatum, and probably also in Deiters' and Bechterew's nucleus. Some investigators have been unable to observe degeneration of this tract after cerebellar lesions; no one has observed it in man, and Thomas has also been unable to notice degeneration in the lateral zone of the cord as described by Marchi.

Some of the fibres of the superior cerebellar peduncle terminate in the nucleus ruber, but most of them probably pass further forward, though they have not been traced beyond the thalamus. This peduncle probably arises chiefly or entirely in the dentatum. This is at variance with the results of some other investigators, and the explanation for this, as given by Thomas, is that the method of Marchi is much more reliable in studying the course of fibres than any method which depends on the formation of sclerotic tissue. The author speaks of a descending branch of the superior peduncle which terminates, in greater part, in the nucleus reticularis tegmenti pontis.

The principal efferent systems of the cerebellum are the superior peduncle, the cerebello-vestibular fasciculus (internal segment of the restiform body) and the descending cerebellar tract. The principal afferent systems are the restiform body and the middle peduncle.

There are not very many clinical reports in the literature of cerebellar affections with post-mortem findings which enable us to understand the physiology of the organ, for cases of tumor or abscess are not suitable for a study of altered cerebellar functions, inasmuch as many symptoms are produced by pressure. Only cases of incomplete development, absence, atrophy or sclerosis of the cerebellum are useful for a study of the physiology of this organ. Thomas describes a symptom-complex of cerebellar disease formed from suitable cases in the literature. He gives in detail the reports of two cases of cerebellar atrophy observed in Dejerine's clinic, cases which he has studied microscopically. He reports also his results in a large number of experiments on the cerebellum of animals, and finishes this important work with the statement that the cerebellum is a reflex centre of equilibration. SPILLER.

BOOKS RECEIVED.

" Practical Treatise on Sexual Disorders of Male and Female," by Robert W. Taylor, M.D. Lea Bros. & Co., New York and Philadelphia, 1897.

"A Manual of Medical Jurisprudence," by Alfred Swaine Taylor, M.D., F.R.S., with additions and citations by Clarke Bell, LL.D. Lea Bros. & Co., New York and Philadelphia, 1897.

"A Text-Book of Diseases of Women," by Chas. B. Penrose, M.D., Ph.D. W. B. Saunders, Philadelphia, 1897.

" The Diseases of Women." A Handbook for Students and Practitioners, by J. Bland Sutton, F.R.C.S., and Arthur E. Giles, M.D., F.R.C.S., Edinburgh. W. B. Saunders, Philadelphia, 1897.